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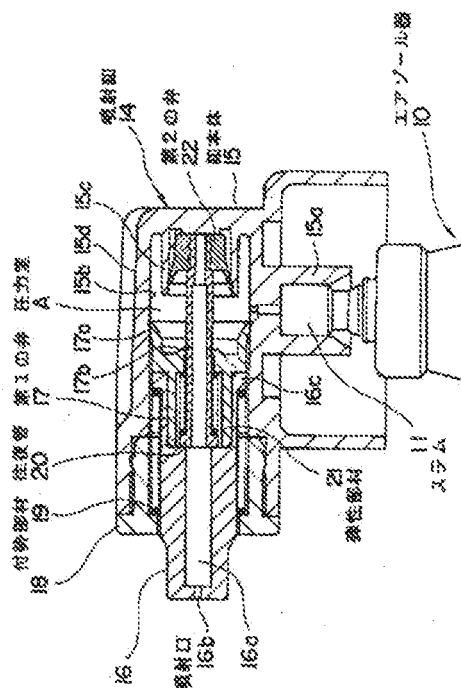
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(54) 【発明の名称】 パイプレーション噴射鉋

(57) 【要約】

【課題】 耐久性を向上し、明確な間欠噴射を得ることができるようにする。

【解決手段】 使用時、指掛け部15dに指を掛けて鉋本体15を押し下げ、ステム11を押し込んでエアゾール器10内の内容物をステム11から噴出し、鉋本体15の圧力室A内に入れる。そして、その圧力室A内の圧力上昇にともない、付勢部材19に抗して第1の弁17を撓動して圧力室A内の容積を増大する一方、その第1の弁17とともに往復管20を介してともに第2の弁22を移動し、その第2の弁22を所定量以上移動するとき、鉋本体15に対する該第2の弁22の押し当てを解除して圧力室Aと往復管20内とを連通し、圧力室A内の内容物を往復管20内を通して噴射口16bから噴射する。



2
噴射し、その内容物を患部に付着するとともにその間欠的に噴射する内容物をワッサージとするバイブレーション噴射組に関する。

【0002】

【従来の技術】従来、この種のバイブレーション噴射組の中には、押し下げてスラムを押し込んだとき、スラムから噴出されるエアゾール器内の内容物を鉛本体の圧力室内に入れ、圧力の上昇にともない該圧力室内の弁を開いて噴射口から噴射する一方、その噴射による圧力の低下にともない弁を閉じて噴射を中断し、その後圧力室内の圧力が上昇すると、再度内容物を噴射し、低下する

と、再び噴射を中断し、この繰り返しにより内容物を噴射口から間欠噴射するものがある。

【0003】ところが、この種の噴射組では、圧力室内の圧力の上昇にともない直ちに弁を開き、噴射にともない直ちに弁を閉じることから、ワッサージ効果を期待できると十分な明確な間欠噴射を得ることができなかつた。

【0004】このため、従来のバイブレーション噴射組の中には、たとえば図10に示すように、エアゾール器1のエアラム2に取り付け、押し下げてスラム2を押し込んだとき、スラム2から噴出するエアゾール器1内の内容物を鉛本体3の圧力室a内に入れ、圧力の上昇にともない該圧力室a内の第1の弁4を第1の付勢部材5を圧縮しながら図中左方向に摺動し、その第1の弁4の摺動とともに、該弁4内に、抵抗リソフ6を介して摩擦を持

って貫入するニードル状の第2の弁7を第2の付勢部材8を圧縮しながら移動するものがある。

【0005】そして、第2の付勢部材8の付勢力が抵抗リソフ6の摩擦力を越えたとき、第2の弁7を戻して第1の弁4との間を開き、その間を通して圧力室a内の内容物を第1の弁4の噴射口4aから噴射していた、その後、その噴射による圧力の低下にともない第1の弁4を図中右方向に摺動し、再び該弁4内に、抵抗リソフ6を介して第2の弁7を摩擦を持って貫入する。そして、圧力室内の圧力が上昇すると、再度第2の弁7を開いて内容物を噴射し、低下すると、再び噴射を中断し、この繰り返しにより内容物を噴射口4aから間欠噴射していた。

40 【0006】これにより、第2の弁7の開きを遅らせ、ワッサージ効果を期待できるに十分な明確な間欠噴射を得ることができるようにしたものがある。

【0007】

【発明の解決しようとする課題】しかしながら、このようなバイブレーション噴射組には、

① 使用時、抵抗リソフ6を介して第1の弁4に対する第2の弁7の貫入と吐出を繰り返すことから、第1の弁4と抵抗リソフ6間に摩擦を生じてやがて明確な間欠噴射を得ることができなくなる

② 第2の付勢部材8の付勢力で第2の弁7を開くか

【特許請求の範囲】

【請求項1】 エアゾール器のスラムに取り付けてそのスラムとともに押し下げ可能に設ける鉛本体と、

その鉛本体内に摺動自在に設け、前記スラムから噴出される前記エアゾール器の内容物が入る圧力室を区画する

その第1の弁を貫通し、外端を噴射口に向けるとともに内端を前記圧力室内に入れる往復管と、

その往復管に取り付けて前記圧力室内に設け、前記第1の弁の摺動にともない前記往復管とともに移動するとき

開閉してその往復管内と前記圧力室とを連通しまたはその連通を遮断する第2の弁と、

前記スラムから噴出される前記エアゾール器の内容物により前記圧力室内の圧力が上昇したとき、付勢力に抗して前記第1の弁を摺動してその第1の弁とともに前記第2の弁を移動し、前記鉛本体に対する押し当てを解除して前記圧力室と前記往復管内とを連通可能に、前記第1の弁を付勢して前記第2の弁を前記鉛本体に押し当て、

前記圧力室と前記往復管内との連通を遮断する付勢部材と、

を備えてなる、バイブレーション噴射組。

【請求項2】 前記第1の弁と前記往復管との間に弾性部材を介してなる、請求項1に記載のバイブレーション噴射組。

【請求項3】 エアゾール器のスラムに取り付けてそのスラムとともに押し下げ可能に設ける鉛本体と、

その鉛本体内に摺動自在に設け、前記スラムから噴出される前記エアゾール器の内容物が入る圧力室を区画する

第1の弁と、

その第1の弁の貫通孔内に摩擦を持って貫入して前記圧力室内に設ける第2の弁と、

前記第1の弁を付勢してこの第2の弁に押し当て、前記貫通孔を塞ぐ付勢部材と、

前記スラムから噴出される前記エアゾール器の内容物により前記圧力室内の圧力が上昇し、前記付勢部材に抗して前記第1の弁を摺動してその第1の弁とともに前記第2の弁を所定量以上移動するとき、その第2の弁に掛け止めて該第2の弁を前記第1の弁から離し、前記貫通孔を開く係止部材と、

を備えてなる、バイブレーション噴射組。

【請求項4】 前記係止部材を一体成形で前記鉛本体と一体につくってなる、請求項3に記載のバイブレーション噴射組。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】この発明は、エアゾール器のスラムに取り付け、たとえば眉毛や血行促進などの目的で使用するバイブレーション噴射組に関する。詳しくは、押し下げてスラムを押し込んだとき、スラムから噴出されるエアゾール器内の内容物を噴射口から間欠的に

断する。
【0018】それから、圧力室A内の圧力が上昇する

と、再度内容物を噴射し、低下すると、再び噴射を中断し、この繰り返しにより圧力室A内の内容物を噴射口3

【0019】請求項4に記載の発明は、請求項3に記載のバリエーション噴射部において、たとえば以下の図

6ないし図9を用いて説明する実施の形態の図とあり、前

記係止部材35とを一体成形して前記部材35と一体に

【0020】として、この請求項4に記載の発明では、

第2の弁40を摩擦に抗して貫通孔37aから引き出す

とき、一体成形で部材35と一体につくった係止部材

35aを、第2の弁40に掛け止める。

【0021】以下、図面を参照しつつ、この発

明の実施の形態につき説明する。図1には、エゾール

器のスクラムに取り付けた状態における請求項1に記載の

バリエーション噴射部の縦断面を示す。

【0022】図中符号10で示すものが、スクラム11を

上向きに突出するエゾール器である。このエゾール

器10内には、内容物として、たとえば育毛効果や血行

促進効果などを有する液体を収納してなる、エゾール

器10のスクラム11には、請求項1に記載の発明による

バリエーション噴射部14を取り付ける。

【0023】噴射部14には、樹脂材料を用いて一体成

形でつくった部材15を設ける。部材15には、中

心にスクラム11を嵌合する下向きのスクラム嵌合部15a

を設けるとともに、上部に径方向の一方に開放する断面

円形の横穴15bを設ける。そして、横穴15bの奥に

【0024】そのような横穴15bの中には、ピストン

16に連結して第1の弁17を摺動自在に設け、部材

15内に、前記スクラム嵌合部15aに連通する圧力室A

を区画する。ピストン16には、中心穴16aの先にこ

の噴射部14の噴射口16bを設けてなる。そして、ピ

ストン16の内端部16cと固定ブッシュ18との間

にコイルバネ状の付勢部材19を設け、その付勢部材1

9でピストン16とともに第1の弁17を内向きに付勢

する。固定ブッシュ18は、横穴15bの入口に圧入に

より取り付けてなる。

【0025】一方、第1の弁17には、中心に往復管2

0を貫通して設ける。往復管20は、外端を噴射口16

bに向けるとともに内端を圧力室A内に入れる。そし

て、外端外周に設けるコイルバネ状の弾性部材21を、

第1の弁17と往復管20との間に存在し、常時は往復

管20の外端をピストン16に当て、往復管20内を中

心穴16aを介して噴射口16bに連通する。

【0026】なお、第1の弁17には、外向き弾性部1

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7aと内向き弾性部17bとを設ける。そして、外向き

弾性部17aを横穴15bの内周に押し当て、内向き弾

【0027】さて、往復管20の内端には、圧力室A内

において第2の弁22を取り付け、前記筒状突部15c

内に収納する。そして、前記付勢部材19の付勢力で第

2の弁22を部材15に押し当て、常時は圧力室Aと

往復管20内との連通を遮断してなる。

【0028】そして、使用時、エゾール器10を手で

持って噴射口16bを患部に向け、指掛け部15dに指

を掛けて部材15を押し下げ、スクラム11をエゾール

器10内に押し込む。すると、エゾール器10内の

内容物がスクラム11から噴出して部材15の圧力室

A内に入り、その圧力室A内の圧力が上昇する。

【0029】その圧力の上昇にともない、付勢部材19

に抗して第1の弁17を摺動して圧力室A内の容積を増

大する。このとき、はじめはその第1の弁17の摺動に

ともない弾性部材21を圧縮するが、その弾性部材21

の弾性力が大きくなると、第1の弁17とともに往復管

20を移動して第2の弁22とともに移動し、やがてそ

の第2の弁22を所定量移動したとき、部材15に対

する該第2の弁22の押し当てを解除する。

【0030】これにより、図2に示すように部材15

と第2の弁22間に隙間をつくり、その隙間を通して圧

力室Aと往復管20内とを連通し、図2中矢示すること

と、圧力室A内の内容物を往復管20内に入れ、ピストン

16の中心穴16aを通して噴射口16bから患部へと

噴射する。

【0031】その後、噴射にともない圧力室A内の圧力

が低下すると、はじめ弾性部材21の弾性力で、図3に

示すように往復管20を戻して外端をピストン16に押

し当てる。その後、さらに圧力が低下すると、付勢部材

19の付勢力で、図4に示すように第1の弁17および

第2の弁22を戻して第2の弁22を再び筒状突部15

c内に入れ、部材15に押し当てて圧力室Aと往復管

20内との連通を遮断し、内容物の噴射を中断する。

【0032】それから、圧力室A内の圧力が上昇する

と、図2および図3に示すように再度内容物を噴射し、

低下すると、図4に示すように再び噴射を中断し、この

繰り返しにより圧力室A内の内容物を噴射口16bから

間欠噴射する。そして、内容物を患部に付着するとも

にその間欠噴射する内容物で患部をマッサージする。

【0033】これにより、この図1ないし図4に示すバ

リエーション噴射部14では、圧力室A内の圧力の上

昇にともない第2の弁22を直ちに動かす、所定量移動

してから開くから、噴射の中間時間を確実に確保し、マ

ッサージ効果を期待できるに十分な明確な間欠噴射を得

ることができる。

【0034】また、抵抗リゾンを使用しないから、大き

35dを形成してなる。

【0042】そのような横穴35bの中には、ピストン

36に連結して第1の弁37を摺動自在に設け、鉛本体

35内に、前記スラム嵌合部35aに連通する圧力室A

を区画する。ピストン36には、中心穴36aの先にこ

の噴射部34の噴射口36bを設けてなる。

【0043】そして、ピストン36の内端部36cと

固定ブッシュ38との間にコイルバネ状の付勢部材39

を設け、その付勢部材39でピストン36とともに第1

の弁37を内向きに付勢する。固定ブッシュ38は、横

穴35bの入口に圧入により取り付け付けてなる。

【0044】一方、第1の弁37には、外向き弾性部3

7aを設け、中心に、直線溝37cを有する貫通孔37

dを設ける。そして、外向き弾性部37aを横穴35b

の内周に押し当て、貫通孔37d内に、圧力室A内に設

けるノール状の第2の弁40の先端を摩擦を持って貫

入してなる。

【0045】第2の弁40には、先端の2つの円周溝に

各々はめ付けて抵抗レゾナ1を設け、途中にシール部

40aを形成し、基端に段部40bを設けて係止部材3

5c内に入り込む抵接部40cを形成してなる。それ

する付勢部材39の付勢力で、第2の弁40の抵接部4

0cを横穴35bの奥に押し当て、貫通孔37d孔縁を

シール部40aに押し付けて貫通孔37dを塞ぎ、圧力

室A内を液密に保持してなる。

【0046】そして、使用時、エプロン部10を手で

持って噴射口36bを患部に向け、指掛け部35cに指

を掛けて鉛本体35を押し下げ、スラム11をエプロ

ン部10内に押し込む。すると、エプロン部10内の

内容物がスラム11から噴出して鉛本体35の圧力室

A内に入り、その圧力室A内の圧力を上昇する。

【0047】その圧力の上昇にともない、付勢部材39

に抗して第1の弁37を摺動して圧力室A内の容積を増

大する。貫通孔37d内に第2の弁40の先端を抵抗レ

ゾナ1を介して摩擦を持って貫入することから、第1

の弁37の移動とともに第2の弁40も移動する。

【0048】そして、やがて第2の弁40が所定量移動

すると、図7に示すように段部40bが係止部35dに

当たり、さらなる移動にともない第2の弁40に係止部

材35cを掛け止めし、第2の弁を摩擦に抗して貫通孔

37dから引き出す。これにより、図8に示すように、

シール部40aを貫通孔37dの孔縁から離して貫通孔

37dを開き、図中央示すとおり圧力室A内の内容物

をその貫通孔37dの直線溝37cを通してピストン3

6内に入れ、その中心穴36aを通して噴射口36bか

ら噴射する。

【0049】その後、噴射にともない圧力室A内の圧力

が低下すると、付勢部材39の付勢力で第1の弁37を

戻して図9に示すように第2の弁40の抵接部40cを

＜摩耗する部分をなくし、耐久性を向上することができ

る。

【0035】ところで、図1ないし図4に示す「バイブ

レーション噴射器14では、鉛本体15を樹脂材料を用い

て一体成形でつくり、それに横穴15bを設けてその横

穴15b内にピストン16・第1の弁17・付勢部材1

9・往復管20・弾性部材21・第2の弁22を取り付

け、エプロン部10の内容物を噴射口16bから横

向きに噴射するようにした。

【0036】しかし、たとえば図5に示すように、鉛本

体15は、下ケース15A内にブッシュ15Bを入れ、

その上に上ケース15Cを被せて構成し、内部に横穴1

5eを設けてその横穴15e内にピストン16・第1の

弁17・付勢部材19・往復管20・弾性部材21・第

2の弁22を取り付け、エプロン部10の内容物を

そのままつぎに噴射口16bから噴射するようにし

てもよい。

【0037】この図5に示す噴射器14では、図1ない

し図4に示す噴射器14の高圧突部15cに変えて、第

2の弁22をブッシュ15B内に入れるようにする。こ

のブッシュ15Bは外面に溝mを設け、スラム11か

ら噴出されたエプロン部10の内容物がその溝mを運

って圧力室A内に入るようにする。なお、その他、この

図5では、図1ないし図4に示す噴射器14の対応する

部分に使用した符号をそのまま使用してなる。

【0038】図5において、新たに付した符号25は、

ピストン16が中心を貫通し、鉛本体15に取り付けて

設ける剣山である。剣山25には、多数の突部25aを

上向きに突出して設ける。符号26は、鉛本体15や剣

山25のまわりを縫い、下部をエプロン部10に取り

付けて設ける円筒状のカバーである。符号27は、不使

用時に、噴射器14に被せてカバー26に取り付けるキ

ヤツである。

【0039】そして、使用するとき、キヤツ27を

外し、エプロン部10を遠ざけて剣山25の突部

25aをなぞれば頭部に押し当て、鉛本体15を押し下

げてスラム11を押し込み、図6は図1ないし図4に示

す場合と同様にエプロン部10の内容物を噴射口1

6bから間欠噴射して頭部に内容物を付着するとも

に、その間欠噴射する内容物をヘッド部をリサイズする。

【0040】さて、次に、図6には、請求項3に記載の

「バイブレーション噴射器」の縦断面を示す。図示噴射器3

4には、樹脂材料を用いて一体成形でつくり鉛本体3

5を設ける。鉛本体35には、中心にエプロン部10の

スラムを嵌合する下向きのスラム嵌合部35aを設けると

ともに、上部に径方向の一方に開放する断面円形の横穴

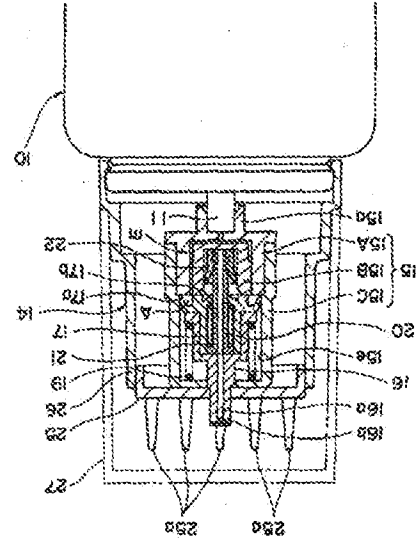
35bを設ける。

【0041】そして、この図示例では、横穴35bの奥

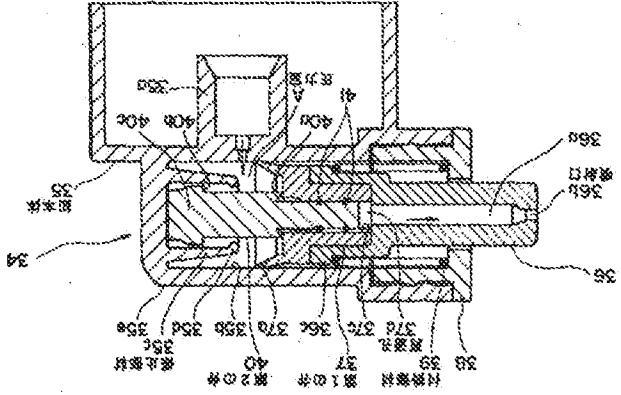
に、開放する方向に向けて筒状に突出する係止部材35

cを一体に設ける。係止部材35cの先端には、係止部

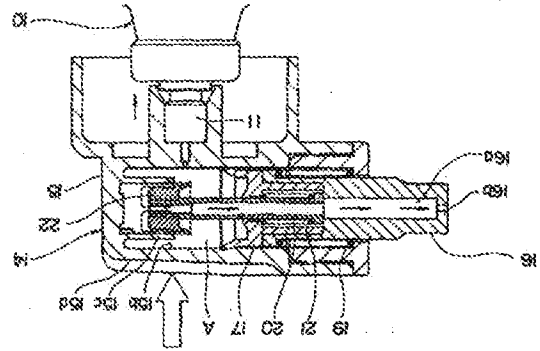
- 【図1】エアゾール器のシステムに取り付けた状態における請求項1に記載のバリエーション噴射組の縦断面図である。
- 【図2】その使用中、開弁開始時の縦断面図である。
- 【図3】その使用中、完全開弁時の縦断面図である。
- 【図4】その使用中、閉弁時の縦断面図である。
- 【図5】エアゾール器のシステムに取り付けた状態における請求項1に記載のバリエーション噴射組の他例の縦断面図である。
- 【図6】請求項3に記載のバリエーション噴射組の縦断面図を示す。
- 【図7】その使用中、開弁開始時の縦断面図である。
- 【図8】その使用中、完全開弁時の縦断面図である。
- 【図9】その使用中、閉弁開始時の縦断面図である。
- 【図10】エアゾール器のシステムに取り付けた状態における従来のバリエーション噴射組の縦断面図である。
- 【符号の説明】
- 10 エアゾール器
- 11 ステム
- 14 バリエーション噴射組
- 15、35 組本体
- 15b、35b 横穴
- 15c、筒状突部
- 16 ピストン
- 16b、36b 噴射口
- 17、37 第1の弁
- 18、38 固定アッシュ
- 19、39 付勢部材
- 20 往復管
- 21 弾性部材
- 22、40 第2の弁
- 35c 係止部材
- 35d 係止部
- 37c 直線溝
- 37d 貫通孔
- 40a シール部
- 40b 段部
- 40c 抵接部
- 41 抵抗リゾ
- A 圧力室
- 【0050】それから、再び圧力室A内の圧力が上昇すると、再度内容物を噴射し、低下すると、再び噴射を中断し、この繰り返しにより圧力室A内の内容物を噴射口36bから間欠噴射する。そして、内容物を患部に付着するとともにその間欠噴射する内容物で患部をワッシャー1051】これにより、この図6ないし図9に示すバリエーション噴射組34では、圧力室A内の圧力の上昇にともない第2の弁40に係止部材35cを掛け止め、貫通孔37d孔縁に対するシール部40aの押し当てを解除して開弁するから、弾性部材を用いずに開弁動作を安定的に行うことができる。また、付勢部材を付勢部材39のみとして部品点数を削減し、コストダウンを図ることができる。
- 【0052】
- 【発明の効果】したがって、請求項1に記載の発明によれば、圧力室内の圧力の上昇にともない第2の弁を直ちに開かず、所定量移動してから開くから、噴射の中断時に間を確実に確保し、ワッシャー効果を得るに十分なる明確な間欠噴射を得ることができる。また、抵抗リゾを使用しないから、大きく摩擦する部分をなくし、耐久性を向上することができる。
- 【0053】請求項2に記載の発明によれば、第1の弁の移動にともない弾性部材を圧縮して往復管を覆って移動し、その往復管とともに第2の弁を移動してやがて本体に対する該第2の弁の押し当てを解除することで、上記効果に加えて、圧力室と往復管内とを連通するから、間欠噴射を一層確実とすることができる。
- 【0054】請求項3に記載の発明によれば、圧力室内の圧力の上昇にともない第2の弁に係止部材を掛け止める。第1の弁に対する第2の弁の押し当てを解除して開弁するから、付勢部材を用いずに開弁動作を安定的に行うことができる。また、全体で用いる付勢部材を少なくして部品点数を削減し、コストダウンを図ることができる。
- 【0055】請求項4に記載の発明によれば、係止部材を一体成形で組本体と一体につくるから、上記請求項3に記載の効果に加えて、部品点数を削減してコストダウンを一体成形で組本体と一体につくるから、上記請求項3に記載の効果に加えて、部品点数を削減してコストダウン



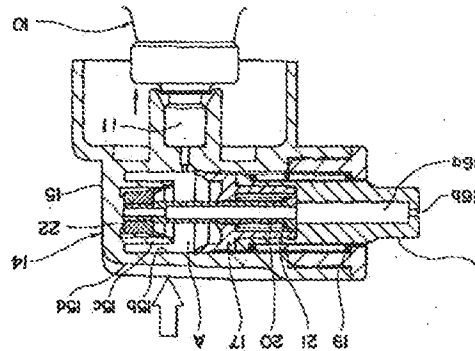
【図5】



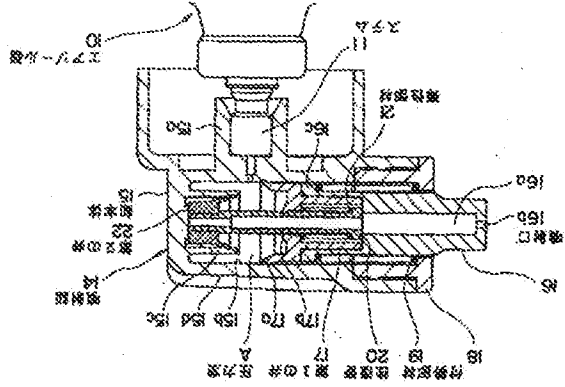
【図6】



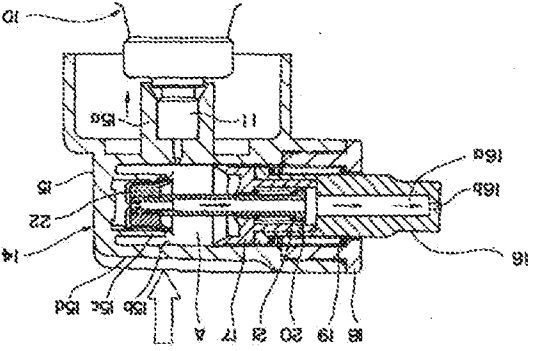
【図3】



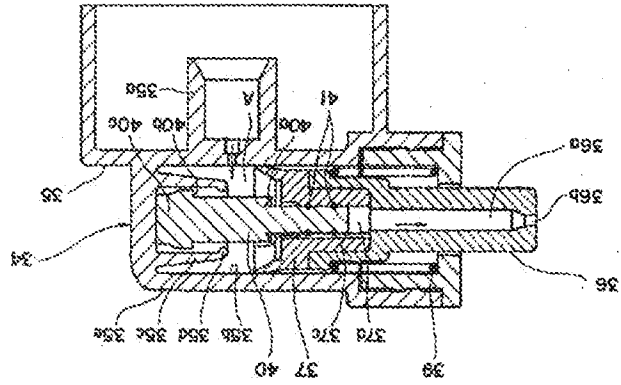
【図4】



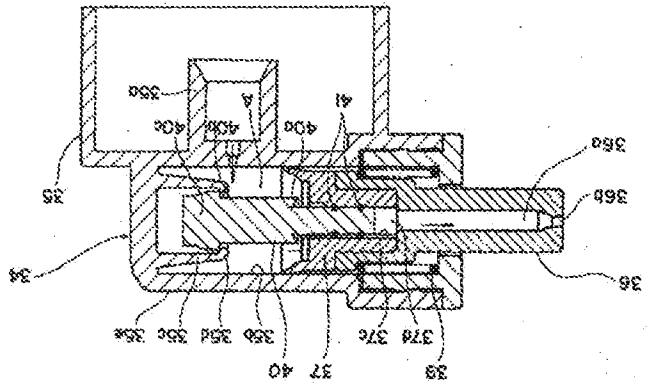
【図1】



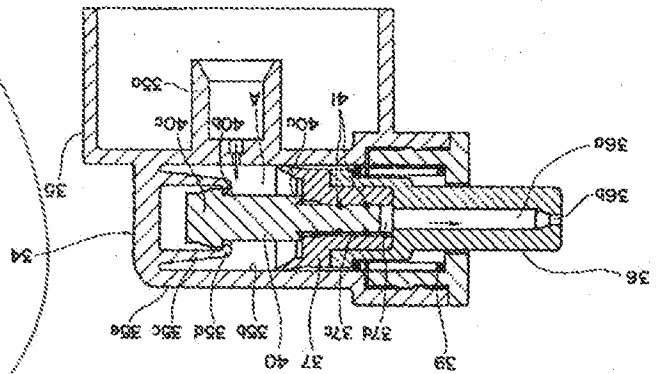
【図2】



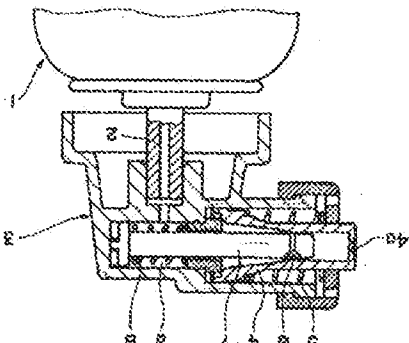
[68]



[88]



[28]



10/18/

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(21)Application number : 10-198186
(72)Inventor : SUGANO HIROSHI
(71)Applicant : MITANI VALVE:KK

(54) VIBRATION SPRAY PUSH BUTTON

(57)Abstract:

PROBLEM TO BE SOLVED: To improve durability and to obtain clear-cut intermittent spray.

SOLUTION: At use, a push button body 15 is pressed down by hooking a finger on a finger-hook section 15d to press stem 11. A

substance within an aerosol container 10 is sprayed out of the stem 11 to enter into a pressure chamber A of the push button body 15.

Corresponding with a pressure increase within the pressure chamber A, a first valve 17 is slid to a pressing member 19 to increase a

volume within the pressure chamber A and to move a second valve 212 through a reciprocating pipe 20 together with the first valve 17.

When the second valve 22 is moved over predetermined volume, a pushing contact of the second valve 22 to the button main body 15 is

released to allow the pressure chamber A to communicate with an interior of the reciprocating pipe 20 and to spray the substance within

the pressure chamber A through the reciprocating pipe 20 from a spray outlet 16b.

LEGAL STATUS

[Date of request for examination]

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[Kind of final disposal of application other than the

examiner's decision of rejection or application

converted registration]

Searching PAJ
[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of

rejection]

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CLAIMS

[Claim(s)]

[Claim 1] The main body of button which attaches in the stem of an aerosol machine and is prepared possible

[depression] with the stem, The 1st valve which divides the pressure room containing the contents of said aerosol

machine which prepares free [sliding] in the main body of button, and blows off from said stem, Both-way tubing

which puts an inner edge into said pressure interior of a room while penetrating the 1st valve and turning an outer edge

to an injection tip, The 2nd valve which opens and closes, and opens said pressure room for free passage in the both-

way tubing, or intercepts the free passage when attaching in the both-way tubing, preparing in said pressure interior of

a room and moving with said both-way tubing with sliding of said 1st valve, When the pressure of said pressure interior

of a room rises by the contents of said aerosol machine which blows off from said stem, Resist the energization force,

slide on said 1st valve, and said 2nd valve is moved with the 1st valve, Vibration ***** which comes to have the

energization member which cancels the push reliance to said main body of button, energizes said 1st valve possible

[said free passage of a pressure room and the inside of said both-way tubing], presses said 2nd valve against said main

body of button, and intercepts said free passage of a pressure room and the inside of said both-way tubing.

[Claim 2] Vibration ***** according to claim 1 which comes to intervene in an elastic member between said 1st valve

and said both-way tubing.

[Claim 3] The main body of button which attaches in the stem of an aerosol machine and is prepared possible

[depression] with the stem, The 1st valve which divides the pressure room containing the contents of said aerosol

machine which prepares free [sliding] in the main body of button, and blows off from said stem, The 2nd valve which

intrudes with friction in the through tube of the 1st valve, and is prepared in said pressure interior of a room, The

energization member which energizes said 1st valve, presses against this 2nd valve, and closes said through tube, When

the pressure of said pressure interior of a room rises by the contents of said aerosol machine which blows off from said

stem, said energization member is resisted, it slides on said 1st valve and said 2nd valve is moved more than the

specified quantity with the 1st valve, Vibration ***** which comes to have the stop member which hangs and stops to

the 2nd valve, separates this 2nd valve from said 1st valve, and opens said through tube.

[Claim 4] Vibration ***** according to claim 3 which really comes to build said stop member to said main body of

button and one with shaping.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to vibration **** which attaches in the stem of an aerosol machine, for example, is used for the purpose, such as hair fostering and circulation promotion. When it depresses and a stem is pushed in detail, the contents in the aerosol machine which blows off from a stem are intermittently injected from an injection tip, and while adhering the contents to the affected part, it is related with vibration **** which massages the affected part by the contents injected intermittently.

[0002]

[Description of the Prior Art] In this kind of vibration ****, conventionally When it depresses and a stem is pushed in, the contents in the aerosol machine which blows off from a stem are put into the pressure interior of a room of a main body of button. If a valve is closed with the fall of the pressure by the injection, injection is interrupted and the pressure of the pressure interior of a room rises after that while opening the valve of this pressure interior of a room with the rise of a pressure and injecting from an injection tip. Contents are injected again, when it falls, injection is interrupted again and there are some which carry out intermittent injection of the contents from an injection tip by this repeat.

[0003]

However, in this kind of ****, since the valve was immediately opened with the rise of the pressure of the pressure interior of a room and the valve was immediately closed with injection, sufficient clear intermittent injection for the massage effectiveness to be expectable was not able to be acquired.

[0004] for this reason, in the conventional vibration **** For example, as shown in drawing 10, when it attaches in the stem 2 of the aerosol machine 1, it depresses and a stem 2 is pushed in, The contents in the aerosol machine 1 spouted from a stem 2 are put in the pressure room a of a main body of button 3, and it slides leftward in drawing, compressing the 1st energization member 5 for the 1st valve 4 in this pressure room a with the rise of a pressure. With sliding of the 1st valve 4 There are some which move the 2nd valve 7 of the shape of a needle which intrudes with friction in this valve 4 through the resistance ring 6 while compressing the 2nd energization member 8.

[0005] And when the energization force of the 2nd energization member 8 exceeded the frictional force of the resistance ring 6, the 2nd valve 7 was returned, between the 1st valve 4 was opened, and the contents in the pressure room a were injected from injection-tip 4a of the 1st valve 4 through the meantime. Then, it slides on the 1st valve 4 in the direction of drawing Nakamigi with the fall of the pressure by the injection, and the 2nd valve 7 is again intruded with friction in this valve 4 through the resistance ring 6. And when the pressure in the pressure room a rose, the 2nd valve 7 was opened again, contents were injected, when it fell, injection was interrupted again and intermittent injection of the contents was carried out from injection-tip 4a by this repeat.

[0006]

Thereby, the aperture of the 2nd valve 7 is delayed and there is a thing which enabled it to acquire sufficient clear intermittent injection for the massage effectiveness to be expectable.

[0007]

[Problem(s) to be Solved by the Invention] however, to such vibration **** From repeating penetrating and the extraction of the 2nd valve 7 to the 1st valve 4 through the resistance ring 6 at the time of use ** produces wear and it becomes impossible to acquire clear intermittent injection soon between the 1st valve 4 and the resistance link 6, since the 2nd valve 7 is opened by the energization force of the 2nd energization member 8 ** which cannot perform valve-opening actuation stably -- since the 2nd energization member 8 was needed with the 1st energization member 5, components mark increased and technical problems, such as becoming cost quantity, occurred.

[0008]

Then, in vibration **** which was mentioned above, invention given in claims 1 and 2 improves endurance, and aims at enabling it to acquire clear intermittent injection. While invention of a publication enables it to perform

valve-opening actuation to claims 3 and 4 stably, it aims at reducing components mark and aiming at a cost cut.

[0009]

[Means for Solving the Problem] Therefore, invention according to claim 1 is set to vibration *****. For example, the main body of button 15 which attaches in the stem 11 of the aerosol machine 10, and is prepared possible [depression] [sliding] in the main body of button 15, and blows off from said stem 11, The both-way tubing 20 which puts in an inner edge in said pressure room A while penetrating the 1st valve 17 and turning an outer edge to injection-tip 16b, The 2nd valve 22 which opens and closes, and opens said pressure room A for free passage in the both-way tubing 20, or intercepts the free passage when attaching in the both-way tubing 20, preparing in said pressure room A and moving with said both-way tubing 20 with sliding of said 1st valve 17, When the pressure in said pressure room A rises by the contents of said aerosol machine 10 which blows off from said stem 11, Resist the energization force, slide on said 1st valve 17, and said 2nd valve 22 is moved with the 1st valve 17. The push reliance to said main body of button 15 is canceled. Possible [said free passage of the pressure room A and the inside of said both-way tubing 20] Said 1st valve 17 is energized, said 2nd valve 22 is pressed against said main body of button 15, and it is characterized by the thing it comes to have the energization member 19 which intercepts said free passage of the pressure room A and the inside of said both-way tubing 20.

[0010] And in this invention according to claim 1, at the time of use, depress a main body of button 15 and a stem 11 is pushed in. Blow off from this stem 11 and the contents in the aerosol machine 10 are put in the pressure room A of a main body of button 15. While resisting the energization member 19 with the rise of the pressure in the pressure room A, sliding on the 1st valve 17 and increasing the volume in the pressure room A. When moving the 2nd valve 22 both through the both-way tubing 20 with the 1st valve 17 and moving the 2nd valve 22 more than the specified quantity, The push reliance of this 2nd valve 22 to a main body of button 15 is canceled, the pressure room A and the inside of the both-way tubing 20 are opened for free passage, and the contents in the pressure room A are injected from injection-tip 16b through the inside of the both-way tubing 20.

[0011] Then, if the pressure in the pressure room A declines with injection, the 1st valve 17 and 2nd valve 22 will be returned by the energization force of the energization member 19, the 2nd valve 22 will be pressed against a main body of button 15, the free passage of the pressure room A and the inside of the both-way tubing 20 will be intercepted, and injection of contents will be interrupted.

[0012] And if the pressure in the pressure room A rises, contents are injected again, if it falls, injection will be interrupted again and intermittent injection of the contents in the pressure room A will be carried out from injection-tip 16b by this repeat.

[0013] Invention according to claim 2 is characterized by the thing it comes to intervene in an elastic member 21 between said 1st valve 17 and said both-way tubing 20 in vibration ***** according to claim 1 as the gestalt of the operation explained using the following drawing 1 thru/or drawing 5.

[0014] And in this invention according to claim 2, when the 1st valve 17 slides with the rise of the pressure in the pressure room A, an elastic member 21 is compressed, the 2nd valve 22 is moved behind time through the both-way tubing 20, the push reliance of this 2nd valve 22 to a main body of button 15 is canceled soon, and the pressure room A and the inside of the both-way tubing 20 are opened for free passage behind time.

[0015] The passage of the gestalt of the operation which explains invention according to claim 3 in vibration ***** using the following drawing 6 thru/or drawing 9. The main body of button 35 which attaches in the stem 11 of the aerosol machine 10, and is prepared possible [depression] with the stem 11, The 1st valve 37 which divides the pressure room A containing the contents of said aerosol machine 10 which prepares free [sliding] in the main body of button 35, and blows off from said stem 11, The 2nd valve 40 which intrudes with friction in 37d of through tubes of the 1st valve 37, and is prepared in said pressure room A, The energization member 39 which energizes said 1st valve 37, presses against this 2nd valve 40, and closes 37d of said through tubes. The pressure in said pressure room A rises by the contents of said aerosol machine 10 which blows off from said stem 11. When resisting said energization member 39, sliding on said 1st valve 37 and moving said 2nd valve 40 more than the specified quantity with the 1st valve 37, it hangs and stops to the 2nd valve 40, this 2nd valve 40 is separated from said 1st valve 37, and it is characterized by the thing it comes to have stop member 35c which opens 37d of said through tubes.

[0016] And in this invention according to claim 3, at the time of use, depress a main body of button 35 and a stem 11 is pushed in. Blow off from this stem 11 and the contents in the aerosol machine 10 are put in the pressure room A of a main body of button 35. While resisting the energization member 39 with the rise of the pressure in the pressure room A, sliding on the 1st valve 37 and increasing the volume in the pressure room A, when moving the 2nd valve 40 more

than the specified quantity with the 1st valve 37, Stop member 35c is hung and stopped to this 2nd valve 40, friction is resisted, the 2nd valve 40 is separated from the 1st valve 37, 37d of through tubes is opened, and the contents in the pressure room A are injected from injection-tip 36b through 37d of the through tube.

[0017] Then, if the pressure in the pressure room A declines with injection, the 1st valve 37 will be returned by the energization force of the energization member 39, the 2nd valve 40 will be again intruded in 37d of through tubes, this 2nd valve 40 will close 37d of through tubes, and injection of contents will be interrupted.

[0018] And if the pressure in the pressure room A rises, contents are injected again, if it falls, injection will be interrupted again and intermittent injection of the contents in the pressure room A will be carried out from injection-tip 36b by this repeat.

[0019] Invention according to claim 4 is characterized by what it really comes to build said stop member 35c to said main body of button 35 and one with shaping for in vibration ***** according to claim 3 as the gestalt of the operation explained using the following drawing 6 thru/or drawing 2.

[0020] And in this invention according to claim 4, when resisting friction and pulling out the 2nd valve 40 from 37d of through tubes, stop member 35c built to a main body of button 35 and one is hung and stopped to the 2nd valve 40 with one shaping.

[0021]

[Embodiment of the Invention] Hereafter, it explains per gestalt of implementation of this invention, referring to a drawing. The longitudinal section of vibration ***** according to claim 1 in the condition of having attached in the stem of an aerosol machine is shown in drawing 1.

[0022] What is shown with the sign 10 in drawing is the aerosol machine which projects a stem 11 upward. It comes as contents to contain the liquid which has for example, the hair-fostering effectiveness, a circulation facilitatory effect, etc. in this aerosol machine 10. Vibration ***** 14 by invention according to claim 1 is attached in the stem 11 of the aerosol machine 10.

[0023] The main body of button 15 really built with shaping using the resin ingredient is formed in ***** 14. While preparing downward stem fitting section 15a which fits a stem 11 into a core in a main body of button 15, cave hole 15b of the cross-section round shape opened to one side of the direction of a path is prepared in the upper part. And it comes to form tubed projected part 15c in the inner part of cave hole 15b towards the direction to open.

[0024] Into such cave hole 15b, it connects with a piston 16, the 1st valve 17 is formed free [sliding], and the pressure room A which is open for free passage in a main body of button 15 at said stem fitting section 15a is divided. It comes to prepare injection-tip 16b of this ***** 14 in a piston 16 at the point of main hole 16a. And the coil-spring-like energization member 19 is formed between inner edge flange 16c of a piston 16, and the fixed bush 18, and the 1st valve 17 is energized to the inner sense with a piston 16 by the energization member 19. It comes to attach the fixed bush 18 in the inlet port of cave hole 15b by press fit.

[0025] On the other hand, the both-way tubing 20 is penetrated and formed in a core at the 1st valve 17. The both-way tubing 20 puts in an inner edge in the pressure room A while turning an outer edge to injection-tip 16b. And the elastic member 21 of the shape of a coil spring prepared in an outer edge periphery is intervened between the 1st valve 17 and the both-way tubing 20, the outer edge of the both-way tubing 20 is always applied to a piston 16, and the inside of the both-way tubing 20 is opened for free passage to injection-tip 16b through main hole 16a.

[0026] In addition, outward elastic section 17a and inside sense elastic section 17b are prepared in the 1st valve 17, and outward elastic section 17a -- the inner circumference of cave hole 15b -- pressing -- inner sense elastic section 17b -- the periphery of the both-way tubing 20 -- pressing -- the inside of the pressure room A -- liquid -- it comes to hold densely

[0027] Now, the 2nd valve 22 is attached in the inner edge of the both-way tubing 20 in the pressure room A, and it contains in said tubed projected part 15c. And the 2nd valve 22 is pressed against a main body of button 15 by the energization force of said energization member 19, and it always comes to intercept the free passage of the pressure room A and the inside of the both-way tubing 20.

[0028] And at the time of use, it has the aerosol machine 10 by hand, and injection-tip 16b is turned to the affected part, a finger is hung on 15d of fingerplate sections, a main body of button 15 is depressed, and a stem 11 is pushed in in the aerosol machine 10. Then, the contents in the aerosol machine 10 blow off from this stem 11, enter in the pressure room A of a main body of button 15, and go up the pressure in the pressure room A.

[0029] With the rise of the pressure, the energization member 19 is resisted, it slides on the 1st valve 17, and the volume in the pressure room A is increased. Although an elastic member 21 is compressed with sliding of that 1st valve 17 in the beginning at this time, when the elastic force of that elastic member 21 became large, the both-way tubing 20 is moved with the 1st valve 17, the 2nd valve 22 also moves [both] and specified quantity migration of that 2nd valve

22 is carried out soon, the push reliance of this 2nd valve 22 to a main body of button 15 is canceled.

[0030] this shows drawing 2 -- as -- between a main body of button 15 and the 2nd valve 22 -- a clearance -- building -- the clearance -- letting it pass -- the pressure room A and the inside of the both-way tubing 20 -- open for free passage -- drawing 2 Nakaya -- as -- the contents in the pressure room A are put in in the both-way tubing 20, and it injects from injection-tip 16b to the affected part through main hole 16a of a piston 16.

[0031] Then, at first, if the pressure in the pressure room A declines with injection, as shown in drawing 3, the both-way tubing 20 will be returned and an outer edge will be pressed against a piston 16 by the elastic force of an elastic member 21. Then, if a pressure declines further, as shown in drawing 4, the 1st valve 17 and 2nd valve 22 are returned, the 2nd valve 22 is again put in in tubed projected part 15c, it will press against a main body of button 15, the free passage of the pressure room A and the inside of the both-way tubing 20 will be intercepted, and injection of contents will be interrupted for the energization force of the energization member 19.

[0032] And when contents are injected again and it falls, as it is shown in drawing 2 and drawing 3, and it is shown in drawing 4, injection is interrupted [when the pressure in the pressure room A rises,] again, and intermittent injection of the contents in the pressure room A is carried out from injection-tip 16b by this repeat. And while adhering contents to the affected part, the affected part is massaged by the contents which carry out intermittent injection.

[0033] Thereby, in vibration **** 14 shown in this drawing 1 thru/or drawing 4, the 2nd valve 22 is not immediately opened with the rise of the pressure in the pressure room A, but since it opens after carrying out specified quantity migration, the downtime of injection can be secured certainly and sufficient clear intermittent injection for the massage effectiveness to be expectable can be acquired.

[0034] Moreover, since a resistance ring is not used, the part greatly worn out can be lost and endurance can be improved.

[0035] By the way, in vibration **** 14 shown in drawing 1 thru/or drawing 4, a main body of button 15 is really built with shaping using a resin ingredient, cave hole 15b is prepared in it, piston 16 and the 1st valve 17, and the 2nd energization member 19, both-way tubing 20, elastic member 21 and valve 22 are attached in the cave hole 15b, and the contents in the aerosol machine 10 were sideways injected from injection-tip 16b.

[0036] As shown, for example in drawing 5, however, a main body of button 15 put in bush 15B in bottom case 15A, and upper case 15C is put and constituted on it. Jugout 15e is prepared in the interior, piston 16 and the 1st valve 17, and the 2nd energization member 19, both-way tubing 20, elastic member 21 and valve 22 are attached in the dugout 15e, and you may make it inject the contents in the aerosol machine 10 from injection-tip 16b straightly as it is.

[0037] In **** 14 shown in this drawing 5, it changes into tubed projected part 15c of **** 14 shown in drawing 1 thru/or drawing 4, and the 2nd valve 22 is put in in bush 15B. Slot m is formed outside at this bush 15B, and it is made for the contents of the aerosol machine 10 which blew off from the stem 11 to enter in the pressure room A through that slot m. In addition, in addition to this, it comes to use the sign used for the part to which **** 14 shown in drawing 1 thru/or drawing 4 corresponds in this drawing 5 as it is.

[0038] In drawing 5, the newly attached sign 25 is Mr. Tsunugi which a piston 16 penetrates a core, and is attached and established in a main body of button 15. Much projected part 25a is projected and prepared upward in Mr. Tsunugi 25. A sign 26 is covering of the shape of a cylinder which covers the surroundings of a main body of button 15 or Mr. Tsunugi 25, and attaches and prepares the lower part in the aerosol machine 10. A sign 27 is a cap which puts on **** 14 and is attached in covering 26 at the time of un-using it.

[0039] And while cap 27 is removed and have the aerosol machine 10 in reverse, when using it, pressing projected part 25a of Mr. Tsunugi 25 against a head, depressing a main body of button 15, pushing in a stem 11, carrying out intermittent injection of the contents in the aerosol machine 10 from injection-tip 16b like the case where it is shown in drawing 1 thru/or drawing 4 henceforth and adhering contents to a head, a head is massaged by the contents which carry out intermittent injection.

[0040] Now, the longitudinal section of vibration **** according to claim 3 is shown in drawing 6 below. The main body of button 35 really built with shaping using the resin ingredient is formed in illustration **** 34. While preparing downward stem fitting section 35a which fits the stem of an aerosol machine into a core in a main body of button 35, cave hole 35b of the cross-section round shape opened to one side of the direction of a path is prepared in the upper part.

[0041] And in this example of illustration, stop member 35c which projects in tubed towards the direction to open is prepared in the inner part of cave hole 35b at one. It comes to form 35d of stop sections at the tip of stop member 35c. Into such cave hole 35b, it connects with a piston 36, the 1st valve 37 is formed free [sliding], and the pressure room A which is open for free passage in a main body of button 35 at said stem fitting section 35a is divided. It comes to prepare injection-tip 36b of this **** 34 in a piston 36 at the point of main hole 36a.

[0043] And the coil-spring-like energization member 39 is formed between inner edge flange 36c of a piston 36, and the fixed bush 38, and the 1st valve 37 is energized to the inner sense with a piston 36 by the energization member 39. It comes to attach the fixed bush 38 in the inlet port of cave hole 35b by press fit.

[0044] On the other hand, outward elastic section 37a is prepared in the 1st valve 37, and 37d of through tubes which have straight-line slot 37c at the core is prepared in it. And outward elastic section 37a is pressed against the inner circumference of cave hole 35b, and it comes to intrude in 37d of through tubes with friction in the tip of the 2nd valve 40 of the shape of a needle established in the pressure room A.

[0045] It inserts in two periphery slots on the tip respectively, the resistance ring 41 is formed in the 2nd valve 40, seal section 40a is formed in it on the way, and it comes to form in it diameter expansion section 40c which prepares step 40b in a end face, and enters in stop member 35c, and the energization force of the energization member 39 which energizes the 1st valve 37 to the inner sense with a piston 36 -- diameter expansion section 40c of the 2nd valve 40 -- the back of cave hole 35b -- pressing -- 37d hole edge of through tubes -- seal section 40a -- pushing -- 37d of through tubes -- closing -- the inside of the pressure room A -- liquid -- it comes to hold densely

[0046] And at the time of use, it has the aerosol machine 10 by hand, and injection-tip 36b is turned to the affected part, a finger is hung on fingerplate section 35e, a main body of button 35 is depressed, and a stem 11 is pushed in in the aerosol machine 10. Then, the contents in the aerosol machine 10 blow off from this stem 11, enter in the pressure room A of a main body of button 35, and go up the pressure in the pressure room A.

[0047] With the rise of the pressure, the energization member 39 is resisted, it slides on the 1st valve 37, and the volume in the pressure room A is increased. Since the tip of the 2nd valve 40 is intruded with friction through the resistance ring 41 in 37d of through tubes, the 2nd valve 40 also moves with migration of the 1st valve 37.

[0048] And if the 2nd valve 40 carries out specified quantity migration soon, as shown in drawing 7, step 40b hangs and carries out the stop of the stop member 35c to the 2nd valve 40 with the further migration in 35d of stop sections, friction will be resisted and the 2nd valve will be pulled out from 37d of through tubes, this shows drawing 8 -- as -- seal section 40a -- from the hole edge of 37d of through tubes -- detaching -- 37d of through tubes -- opening -- drawing Nakaya -- a passage -- the inside of the pressure room A -- contents are put in in a piston 36 through straight-line slot of 37d of the through tube 37c, and it injects from injection-tip 36b through the main hole 36a.

[0049] Then, if the pressure in the pressure room A declines with injection, as the 1st valve 37 is returned by the energization force of the energization member 39 and it is shown in drawing 9, diameter expansion section 40c of the 2nd valve 40 is pressed in the inner part of cave hole 35b, the 2nd valve 40 is again intruded in 37d of through tubes, 37d hole edge of through tubes will be forced on seal section 40a, 37d of through tubes will be closed, and injection of contents will be interrupted.

[0050] And if the pressure in the pressure room A rises again, contents are injected again, if it falls, injection will be interrupted again and intermittent injection of the contents in the pressure room A will be carried out from injection-tip 36b by this repeat. And while adhering contents to the affected part, the affected part is massaged by the contents which carry out intermittent injection.

[0051] Thereby, in vibration ***** 34 shown in this drawing 6 thru/or drawing 9, since stop member 35c is hung on the 2nd valve 40 with the rise of the pressure in the pressure room A, a stop and the push reliance of seal section 40a to 37d hole edge of through tubes are canceled and it opens, valve-opening actuation can be performed stably, without using an elastic member. Moreover, components mark can be reduced by the ability using an energization member only as the energization member 39, and a cost cut can be aimed at.

[0052]

[Effect of the Invention] Therefore, according to invention according to claim 1, the 2nd valve is not immediately opened with the rise of the pressure of the pressure interior of a room, but since it opens after carrying out specified quantity migration, the downtime of injection can be secured certainly and sufficient clear intermittent injection for the massage effectiveness to be expected can be acquired. Moreover, since a resistance ring is not used, the part greatly worn out can be lost and endurance can be improved.

[0053] According to invention according to claim 2, an elastic member is compressed with sliding of the 1st valve, both-way tubing is moved behind time, and since a pressure room and the inside of both-way tubing are delayed and it is open for free passage in addition to the above-mentioned effectiveness by moving the 2nd valve and canceling the push reliance of this 2nd valve to a main body of button soon with the both-way tubing, intermittent injection can much more be ensured.

[0054] According to invention according to claim 3, since a stop member is hung on the 2nd valve with the rise of the pressure of the pressure interior of a room, the push reliance of the 2nd valve to a stop and the 1st valve is canceled and it opens, valve-opening actuation can be performed stably, without using an energization member. Moreover, the

energization member used on the whole can be lessened, components mark can be reduced, and a cost cut can be aimed at.
[0055] According to invention according to claim 4, since a stop member is really built to a main body of button and one with shaping, in addition to effectiveness given in above-mentioned claim 3, components mark can be reduced and a cost cut can be aimed at.

[Translation done.]

* NOTICES *

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TECHNICAL FIELD

[Field of the Invention] This invention relates to vibration ***** which attaches in the stem of an aerosol machine, for example, is used for the purpose, such as hair fostering and circulation promotion. When it depresses and a stem is pushed in in detail, the contents in the aerosol machine which blows off from a stem are intermittently injected from an injection tip, and while adhering the contents to the affected part, it is related with vibration ***** which massages the affected part by the contents injected intermittently.

[Translation done.]

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EFFECT OF THE INVENTION

[Effect of the Invention] Therefore, according to invention according to claim 1, the 2nd valve is not immediately opened with the rise of the pressure of the pressure interior of a room, but since it opens after carrying out specified quantity migration, the downtime of injection can be secured certainly and sufficient clear intermittent injection for the massage effectiveness to be expectable can be acquired. Moreover, since a resistance ring is not used, the part greatly worn out can be lost and endurance can be improved.

[0053] According to invention according to claim 2, an elastic member is compressed with sliding of the 1st valve, both-way tubing is moved behind time, and since a pressure room and the inside of both-way tubing are delayed and it is open for free passage in addition to the above-mentioned effectiveness by moving the 2nd valve and canceling the push reliance of this 2nd valve to a main body of button soon with the both-way tubing, intermittent injection can much more be ensured.

[0054] According to invention according to claim 3, since a stop member is hung on the 2nd valve with the rise of the pressure of the pressure interior of a room, the push reliance of the 2nd valve to a stop and the 1st valve is canceled and it opens, valve-opening actuation can be performed stably, without using an energization member. Moreover, the energization member used on the whole can be lessened, components mark can be reduced, and a cost cut can be aimed at.

[0055] According to invention according to claim 4, since a stop member is really built to a main body of button and one with shaping, in addition to effectiveness given in above-mentioned claim 3, components mark can be reduced and a cost cut can be aimed at.

[Translation done.]

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MEANS

[Means for Solving the Problem] Therefore, invention according to claim 1 is set to vibration *****. For example, the main body of button 15 which attaches in the stem 11 of the aerosol machine 10, and is prepared possible [depression] with the stem 11 as the gestalt of the operation explained using the following drawing 1 thru/or drawing 5, The 1st valve 17 which divides the pressure room A containing the contents of said aerosol machine 10 which prepares free [sliding] in the main body of button 15, and blows off from said stem 11, The both-way tubing 20 which puts in an inner edge in said pressure room A while penetrating the 1st valve 17 and turning an outer edge to injection-tip 16b, The 2nd valve 22 which opens and closes, and opens said pressure room A for free passage in the both-way tubing 20, or intercepts the free passage when attaching in the both-way tubing 20, preparing in said pressure room A and moving with said both-way tubing 20 with sliding of said 1st valve 17, When the pressure in said pressure room A rises by the contents of said aerosol machine 10 which blows off from said stem 11, Resist the energization force, slide on said 1st valve 17, and said 2nd valve 22 is moved with the 1st valve 17, The push reliance to said main body of button 15 is canceled. Possible [said free passage of the pressure room A and the inside of said both-way tubing 20] Said 1st valve 17 is energized, said 2nd valve 22 is pressed against said main body of button 15, and it is characterized by the thing it comes to have the energization member 19 which intercepts said free passage of the pressure room A and the inside of said both-way tubing 20.

[0010] And in this invention according to claim 1, at the time of use, depress a main body of button 15 and a stem 11 is pushed in. Blow off from this stem 11 and the contents in the aerosol machine 10 are put in in the pressure room A of a main body of button 15. While resisting the energization member 19 with the rise of the pressure in the pressure room A, sliding on the 1st valve 17 and increasing the volume in the pressure room A. When moving the 2nd valve 22 both through the both-way tubing 20 with the 1st valve 17 and moving the 2nd valve 22 more than the specified quantity, The push reliance of this 2nd valve 22 to a main body of button 15 is canceled, the pressure room A and the inside of the both-way tubing 20 are opened for free passage, and the contents in the pressure room A are injected from injection-tip 16b through the inside of the both-way tubing 20.

[0011] Then, if the pressure in the pressure room A declines with injection, the 1st valve 17 and 2nd valve 22 will be returned by the energization force of the energization member 19, the 2nd valve 22 will be pressed against a main body of button 15, the free passage of the pressure room A and the inside of the both-way tubing 20 will be intercepted, and injection of contents will be interrupted.

[0012] And if the pressure in the pressure room A rises, contents are injected again, if it falls, injection will be interrupted again and intermittent injection of the contents in the pressure room A will be carried out from injection-tip 16b by this repeat.

[0013] Invention according to claim 2 is characterized by the thing it comes to intervene in an elastic member 21 between said 1st valve 17 and said both-way tubing 20 in vibration ***** according to claim 1 as the gestalt of the operation explained using the following drawing 1 thru/or drawing 5.

[0014] And in this invention according to claim 2, when the 1st valve 17 slides with the rise of the pressure in the pressure room A, an elastic member 21 is compressed, the 2nd valve 22 is moved behind time through the both-way tubing 20, the push reliance of this 2nd valve 22 to a main body of button 15 is canceled soon, and the pressure room A and the inside of the both-way tubing 20 are opened for free passage behind time.

[0015] The passage of the gestalt of the operation which explains invention according to claim 3 in vibration ***** using the following drawing 6 thru/or drawing 9, The main body of button 35 which attaches in the stem 11 of the aerosol machine 10, and is prepared possible [depression] with the stem 11, The 1st valve 37 which divides the pressure room A containing the contents of said aerosol machine 10 which prepares free [sliding] in the main body of button 35, and blows off from said stem 11, The 2nd valve 40 which intrudes with friction in 37d of through tubes of

the 1st valve 37, and is prepared in said pressure room A, The energization member 39 which energizes said 1st valve 37, presses against this 2nd valve 40, and closes 37d of said through tubes, The pressure in said pressure room A rises by the contents of said aerosol machine 10 which blows off from said stem 11. When resisting said energization member 39, sliding on said 1st valve 37 and moving said 2nd valve 40 more than the specified quantity with the 1st valve 37, and it is characterized by the thing it comes to have stop member 35c which opens 37d of said through tubes.

[0016] And in this invention according to claim 3, at the time of use, depress a main body of button 35 and a stem 11 is pushed in. Blow off from this stem 11 and the contents in the aerosol machine 10 are put in the pressure room A of a main body of button 35. While resisting the energization member 39 with the rise of the pressure in the pressure room A, sliding on the 1st valve 37 and increasing the volume in the pressure room A, when moving the 2nd valve 40 more than the specified quantity with the 1st valve 37, Stop member 35c is hung and stopped to this 2nd valve 40, friction is resisted, the 2nd valve 40 is separated from the 1st valve 37, 37d of through tubes is opened, and the contents in the pressure room A are injected from injection-tip 36b through 37d of the through tube.

[0017] Then, if the pressure in the pressure room A declines with injection, the 1st valve 37 will be returned by the energization force of the energization member 39, the 2nd valve 40 will be again intruded in 37d of through tubes, this 2nd valve 40 will close 37d of through tubes, and injection of contents will be interrupted.

[0018] And if the pressure in the pressure room A rises, contents are injected again, if it falls, injection will be interrupted again and intermittent injection of the contents in the pressure room A will be carried out from injection-tip 36b by this repeat.

[0019] Invention according to claim 4 is characterized by what it really comes to build said stop member 35c to said main body of button 35 and one with shaping for in vibration ***** according to claim 3 as the gestalt of the operation explained using the following drawing 6 thru/drawing 9.

[0020] And in this invention according to claim 4, when resisting friction and pulling out the 2nd valve 40 from 37d of through tubes, stop member 35c built to a main body of button 35 and one is hung and stopped to the 2nd valve 40 with one shaping.

[0021] [Embodiment of the Invention] Hereafter, it explains per gestalt of implementation of this invention, referring to a drawing. The longitudinal section of vibration ***** according to claim 1 in the condition of having attached in the stem of an aerosol machine is shown in drawing 1.

[0022] What is shown with the sign 10 in drawing is the aerosol machine which projects a stem 11 upward. It comes as contents to contain the liquid which has for example, the hair-fostering effectiveness, a circulation facilitatory effect, etc. in this aerosol machine 10. Vibration ***** 14 by invention according to claim 1 is attached in the stem 11 of the aerosol machine 10.

[0023] The main body of button 15 really built with shaping using the resin ingredient is formed in ***** 14. While preparing downward stem fitting section 15a which fits a stem 11 into a core in a main body of button 15, cave hole 15b of the cross-section round shape opened to one side of the direction of a path is prepared in the upper part. And it comes to form tubed projected part 15c in the inner part of cave hole 15b towards the direction to open.

[0024] Into such cave hole 15b, it connects with a piston 16, the 1st valve 17 is formed free [sliding], and the pressure room A which is open for free passage in a main body of button 15 at said stem fitting section 15a is divided. It comes to prepare injection-tip 16b of this ***** 14 in a piston 16 at the point of main hole 16a. And the coil-spring-like energization member 19 is formed between inner edge flange 16c of a piston 16, and the fixed bush 18, and the 1st valve 17 is energized to the inner sense with a piston 16 by the energization member 19. It comes to attach the fixed bush 18 in the inlet port of cave hole 15b by press fit.

[0025] On the other hand, the both-way tubing 20 is penetrated and formed in a core at the 1st valve 17. The both-way tubing 20 puts in an inner edge in the pressure room A while turning an outer edge to injection-tip 16b. And the elastic member 21 of the shape of a coil spring prepared in an outer edge periphery is intervened between the 1st valve 17 and the both-way tubing 20, the outer edge of the both-way tubing 20 is always applied to a piston 16, and the inside of the both-way tubing 20 is opened for free passage to injection-tip 16b through main hole 16a.

[0026] In addition, outward elastic section 17a and inside sense elastic section 17b are prepared in the 1st valve 17, and outward elastic section 17a -- the inner circumference of cave hole 15b -- pressing -- inner sense elastic section 17b -- the periphery of the both-way tubing 20 -- pressing -- the inside of the pressure room A -- liquid -- it comes to hold densely

[0027] Now, the 2nd valve 22 is attached in the inner edge of the both-way tubing 20 in the pressure room A, and it contains in said tubed projected part 15c. And the 2nd valve 22 is pressed against a main body of button 15 by the

room A and the inside of the both-way tubing 20.

[0028] And at the time of use, it has the aerosol machine 10 by hand, and injection-tip 16b is turned to the affected part,

a finger is hung on 15d of fingertip sections, a main body of button 15 is depressed, and a stem 11 is pushed in in the

aerosol machine 10. Then, the contents in the aerosol machine 10 blow off from this stem 11, enter in the pressure

room A of a main body of button 15, and go up the pressure in the pressure room A.

[0029] With the rise of the pressure, the energization member 19 is resisted, it slides on the 1st valve 17, and the

volume in the pressure room A is increased. Although an elastic member 21 is compressed with sliding of that 1st valve

17 in the beginning at this time, when the elastic force of that elastic member 21 became large, the both-way tubing 20

is moved with the 1st valve 17, the 2nd valve 22 also moves [both] and specified quantity migration of that 2nd valve

22 is carried out soon, the push reliance of this 2nd valve 22 to a main body of button 15 is canceled.

[0030] This shows drawing 2 -- as -- between a main body of button 15 and the 2nd valve 22 -- a clearance -- building --

the clearance -- letting it pass -- the pressure room A and the inside of the both-way tubing 20 -- open for free passage --

- drawing 2 Nakaya -- as -- the contents in the pressure room A are put in in the both-way tubing 20, and it

injects from injection-tip 16b to the affected part through main hole 16a of a piston 16.

[0031] Then, at first, if the pressure in the pressure room A declines with injection, as shown in drawing 3, the both-

way tubing 20 will be returned and an outer edge will be pressed against a piston 16 by the elastic force of an elastic

member 21. Then, if a pressure declines further, as shown in drawing 4, the 1st valve 17 and 2nd valve 22 are returned,

the 2nd valve 22 is again put in in tubed projected part 15c, it will press against a main body of button 15, the free

passage of the pressure room A and the inside of the both-way tubing 20 will be intercepted, and injection of contents

will be interrupted for the energization force of the energization member 19.

[0032] And when contents are injected again and it falls, as it is shown in drawing 2 and drawing 3, and it is shown in

drawing 4, injection is interrupted [when the pressure in the pressure room A rises,] again, and intermittent injection

of the contents in the pressure room A is carried out from injection-tip 16b by this repeat. And while adhering contents

to the affected part, the affected part is massaged by the contents which carry out intermittent injection.

[0033] Thereby, in vibration ***** 14 shown in this drawing 1 thru/or drawing 4, the 2nd valve 22 is not

immediately opened with the rise of the pressure in the pressure room A, but since it opens after carrying out specified

quantity migration, the downtime of injection can be secured certainly and sufficient clear intermittent injection for the

massage effectiveness to be expectable can be acquired.

[0034] Moreover, since a resistance ring is not used, the part greatly worn out can be lost and endurance can be

improved.

[0035] By the way, in vibration ***** 14 shown in drawing 1 thru/or drawing 4, a main body of button 15 is really

built with shaping using a resin ingredient, cave hole 15b is prepared in it, piston 16 and the 1st valve 17, and the 2nd

energization member 19, both-way tubing 20, elastic member 21 and valve 22 are attached in the cave hole 15b, and

the contents in the aerosol machine 10 were sideways injected from injection-tip 16b.

[0036] As shown, for example in drawing 5, however, a main body of button 15 put in bush 15B in bottom case 15A,

and upper case 15C is put and constituted on it. Dugout 15e is prepared in the interior, piston 16 and the 1st valve 17,

and the 2nd energization member 19, both-way tubing 20, elastic member 21 and valve 22 are attached in the dugout

15e, and you may make it inject the contents in the aerosol machine 10 from injection-tip 16b straightly as it is.

[0037] In ***** 14 shown in this drawing 5, it changes into tubed projected part 15c of ***** 14 shown in drawing

1 thru/or drawing 4, and the 2nd valve 22 is put in in bush 15B. Slot m is formed outside at this bush 15B, and it is

made for the contents of the aerosol machine 10 which blew off from the stem 11 to enter in the pressure room A

through that slot m. In addition, in addition to this, it comes to use the sign used for the part to which ***** 14 shown

in drawing 1 thru/or drawing 4 corresponds in this drawing 5 as it is.

[0038] In drawing 5, the newly attached sign 25 is Mt. Tsunagi which a piston 16 penetrates a core, and is attached and

established in a main body of button 15. Much projected part 25a is projected and prepared upward in Mt. Tsunagi 25.

A sign 26 is covering of the shape of a cylinder which covers the surroundings of a main body of button 15 or Mt.

Tsunagi 25, and attaches and prepares the lower part in the aerosol machine 10. A sign 27 is a cap which puts on

***** 14 and is attached in covering 26 at the time of un-using it.

[0039] And while cap 27 is removed and have the aerosol machine 10 in reverse, when using it, pressing projected part

25a of Mt. Tsunagi 25 against a head, depressing a main body of button 15, pushing in a stem 11, carrying out

intermittent injection of the contents in the aerosol machine 10 from injection-tip 16b like the case where it is shown in

drawing 1 thru/or drawing 4 henceforth and adhering contents to a head, a head is massaged by the contents which

carry out intermittent injection.

[0040] Now, the longitudinal section of vibration ***** according to claim 3 is shown in drawing 6 below. The main body of button 35 really built with shaping using the resin ingredient is formed in illustration ***** 34. While preparing downward stem fitting section 35a which fits the stem of an aerosol machine into a core in a main body of button 35, cave hole 35b of the cross-section round shape opened to one side of the direction of a path is prepared in the upper part.

[0041] And in this example of illustration, stop member 35c which projects in tubed towards the direction to open is prepared in the inner part of cave hole 35b at one. It comes to form 35d of stop sections at the tip of stop member 35c. Into such cave hole 35b, it connects with a piston 36, the 1st valve 37 is formed free [sliding], and the pressure room A which is open for free passage in a main body of button 35 at said stem fitting section 35a is divided. It comes to prepare injection-tip 36b of this ***** 34 in a piston 36 at the point of main hole 36a.

[0043] And the coil-spring-like energization member 39 is formed between inner edge flange 36c of a piston 36, and the fixed bush 38, and the 1st valve 37 is energized to the inner sense with a piston 36 by the energization member 39. It comes to attach the fixed bush 38 in the inlet port of cave hole 35b by press fit.

[0044] On the other hand, outward elastic section 37a is prepared in the 1st valve 37, and 37d of through tubes which have straight-line slot 37c at the core is prepared in it. And outward elastic section 37a is pressed against the inner circumference of cave hole 35b, and it comes to intrude in 37d of through tubes with friction in the tip of the 2nd valve 40 of the shape of a needle established in the pressure room A.

[0045] It inserts in two periphery slots on the tip respectively, the resistance ring 41 is formed in the 2nd valve 40, seal section 40a is formed in it on the way, and it comes to form in it diameter expansion section 40c which prepares step 40b in a end face, and enters in stop member 35c, and the energization force of the energization member 39 which energizes the 1st valve 37 to the inner sense with a piston 36 -- diameter expansion section 40c of the 2nd valve 40 -- the back of cave hole 35b -- pressing -- 37d hole edge of through tubes -- seal section 40a -- pushing -- 37d of through tubes -- closing -- the inside of the pressure room A -- liquid -- it comes to hold densely

[0046] And at the time of use, it has the aerosol machine 10 by hand, and injection-tip 36b is turned to the affected part, a finger is hung on fingerplate section 35e, a main body of button 35 is depressed, and a stem 11 is pushed in in the aerosol machine 10. Then, the contents in the aerosol machine 10 blow off from this stem 11, enter in the pressure room A of a main body of button 35, and go up the pressure in the pressure room A.

[0047] With the rise of the pressure, the energization member 39 is resisted, it slides on the 1st valve 37, and the volume in the pressure room A is increased. Since the tip of the 2nd valve 40 is intruded with friction through the resistance ring 41 in 37d of through tubes, the 2nd valve 40 also moves with migration of the 1st valve 37.

[0048] And if the 2nd valve 40 carries out specified quantity migration soon, as shown in drawing 7, step 40b hangs and carries out the stop of the stop member 35c to the 2nd valve 40 with the further migration in 35d of stop sections, friction will be resisted and the 2nd valve will be pulled out from 37d of through tubes, this shows drawing 8 -- as -- seal section 40a -- from the hole edge of 37d of through tubes -- detaching -- 37d of through tubes -- opening -- drawing Nakaya -- ***** -- a passage -- the inside of the pressure room A -- contents are put in a piston 36 through straight-line slot of 37d of the through tube 37c, and it injects from injection-tip 36b through the main hole 36a.

[0049] Then, if the pressure in the pressure room A declines with injection, as the 1st valve 37 is returned by the energization force of the energization member 39 and it is shown in drawing 9, diameter expansion section 40c of the 2nd valve 40 is pressed in the inner part of cave hole 35b, the 2nd valve 40 is again intruded in 37d of through tubes, 37d hole edge of through tubes will be forced on seal section 40a, 37d of through tubes will be closed, and injection of contents will be interrupted.

[0050] And if the pressure in the pressure room A rises again, contents are injected again, if it falls, injection will be interrupted again and intermittent injection of the contents in the pressure room A will be carried out from injection-tip 36b by this repeat. And while adhering contents to the affected part, the affected part is massaged by the contents which carry out intermittent injection.

[0051] Thereby, in vibration ***** 34 shown in this drawing 6 thru/or drawing 9, since stop member 35c is hung on the 2nd valve 40 with the rise of the pressure in the pressure room A, a stop and the push reliance of seal section 40a to 37d hole edge of through tubes are canceled and it opens, valve-opening actuation can be performed stably, without using an elastic member. Moreover, components mark can be reduced by the ability using an energization member only as the energization member 39, and a cost cut can be aimed at.

[Translation done.]

* NOTICES *

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. *** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is drawing of longitudinal section of vibration ***** according to claim 1 in the condition of having attached in the stem of an aerosol machine.

[Drawing 2] It is drawing of longitudinal section at the time of valve-opening initiation during the use.

[Drawing 3] It is drawing of longitudinal section at the time of full valve opening during the use.

[Drawing 4] It is drawing of longitudinal section at the time of clausilium during the use.

[Drawing 5] It is drawing of longitudinal section of the other examples of vibration ***** according to claim 1 in the condition of having attached in the stem of an aerosol machine.

[Drawing 6] Drawing of longitudinal section of vibration ***** according to claim 3 is shown.

[Drawing 7] It is drawing of longitudinal section at the time of valve-opening initiation during the use.

[Drawing 8] It is drawing of longitudinal section at the time of full valve opening during the use.

[Drawing 9] It is drawing of longitudinal section at the time of clausilium initiation during the use.

[Drawing 10] It is drawing of longitudinal section of the conventional vibration ***** in the condition of having attached in the stem of an aerosol machine.

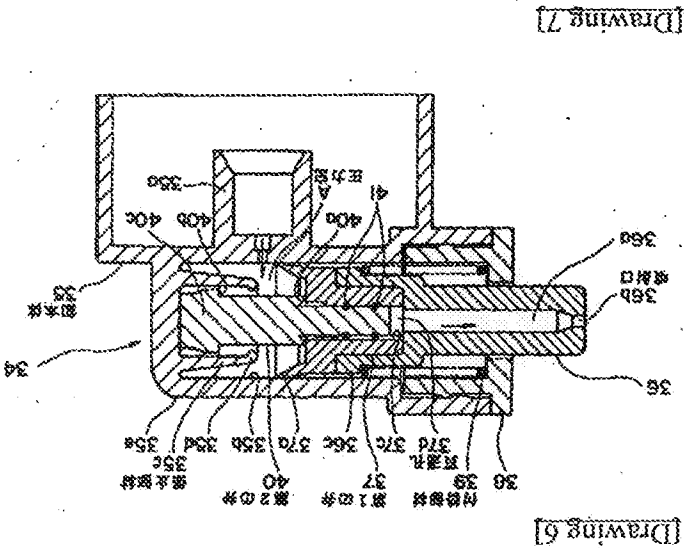
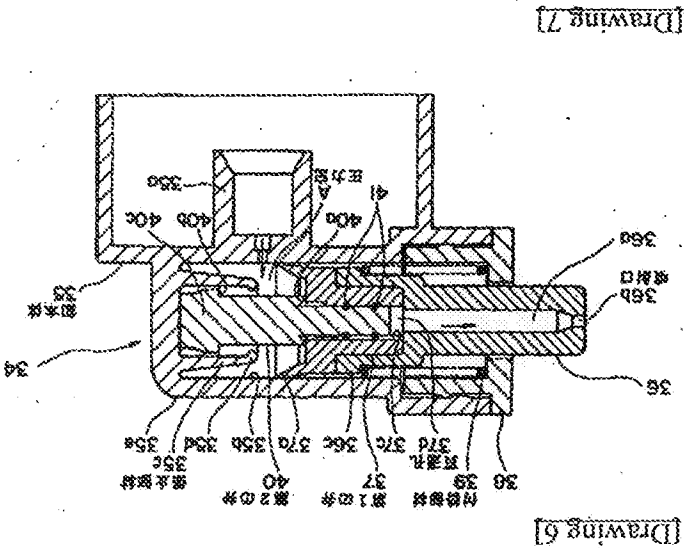
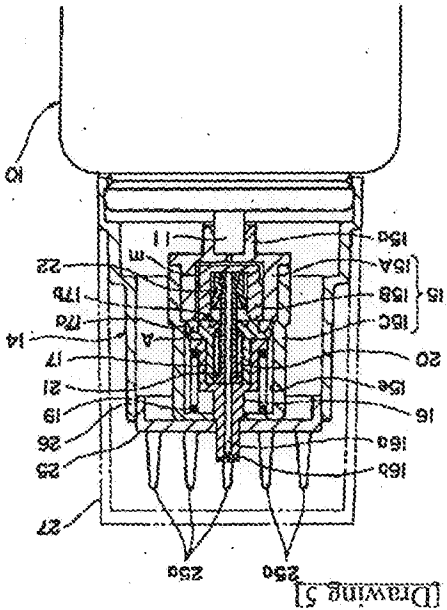
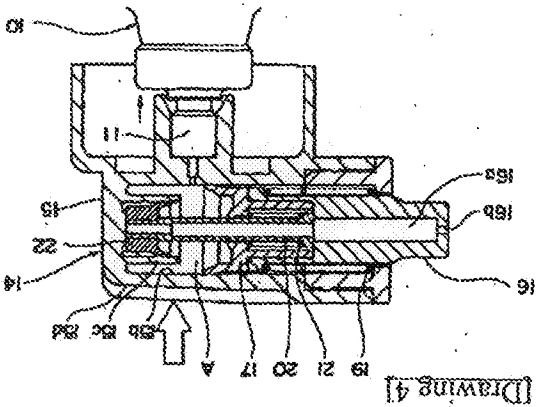
[Description of Notations]

10 Aerosol Machine
11 Stem
14 Vibration *****
15-35 Main body of button
15band35b Cave hole
15c Tubed projected part
16 Piston
16band36b Injection tip
17-37 The 1st valve
18-38 Fixed bush
19-39 Energization member
20 Both-way Tubing
21 Elastic Member
22-40 The 2nd valve
35c Stop member
35d Stop section
37c Straight-line slot
37d Through tube
40a Seal section
40b Step
40c Diameter expansion section
41 Resistance Ring
A Pressure room

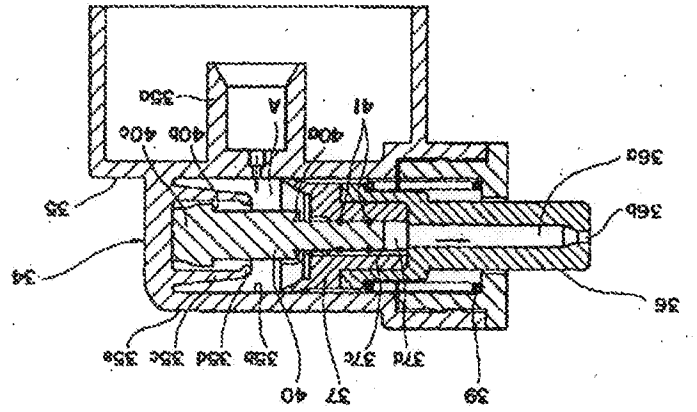
[Translation done.]

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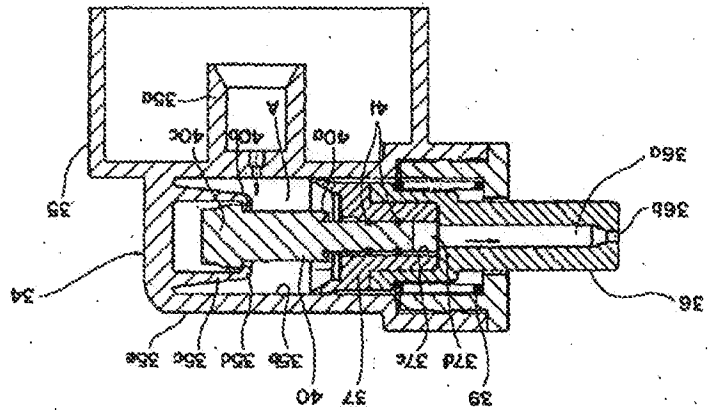
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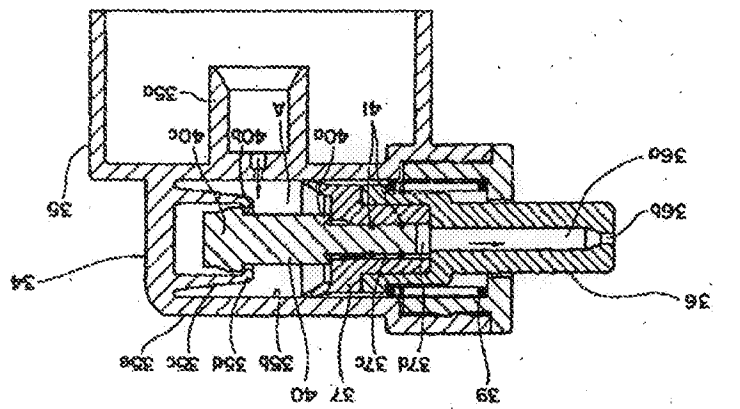
[Drawing 10]



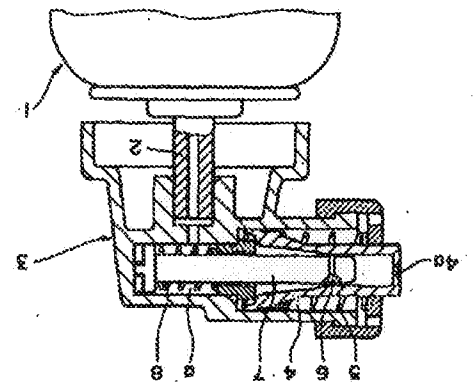
[Drawing 9]



[Drawing 8]



[Translation done.]



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